DOCUMENT RESUME

ED 181 848 HE 012 274

AUTHOR Geiger, Roger L.
TITLE The College Curriculum and the Marketplace. Academic Disciplines and the Trend Toward Vocationalism in the 1970s. Yale Higher Education Research Group Working Paper.
INSTITUTION Yale Univ., New Haven, Conn. Inst. for Social and Policy Studies.
SPONS AGENCY Lilly Endowment, Inc., Indianapolis, Ind.
REPORT NO YHERG-40
PUB DATE 80
NOTE 37p.
AVAILABLE FROM Higher Education Research Group, Institution for Social and Policy Studies, Yale University, 1732 Yale Station, New Haven, CT 06520

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Careers; *College Curriculum; College Graduates; *College Role; Curriculum Design; Educational History; Educational Quality; *Education Work Relationship; Higher Education; *Intellectual Disciplines; *Liberal Arts; Relevance (Education); Specialization; Trend Analysis; Values; *Vocational Education

ABSTRACT

What is taught, what is learned, and how they relate to graduate employment are examined in an effort to interpret the trend toward vocationalism within higher education institutions. It is suggested that tightening of the graduate labor market inaugurated an accelerating trend toward vocationalism that has contributed to a deterioration of academic values and a demoralization of college faculty. The teaching responsibilities of colleges are discussed and divided into general knowledge, disciplinary knowledge, and instrumental knowledge. Instrumental knowledge is described as practical or vocational instruction. A general trend away from disciplinary majors in favor of the instrumental subjects is discussed. The values and outcomes of general, disciplinary, and instrumental education are explored and it is concluded from the research that the large increase in instrumental graduates does not represent a better articulation of education and employment, nor does it constitute a productive social investment. Therefore it is suggested that the traditional mission of American undergraduate education--disinterested learning for cultural enrichment and intellectual development--now appears in danger of being displaced by vocational programs of dubious value. (Author/SF)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED181848

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Yale Univ
FSPS

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

HIGHER EDUCATION RESEARCH GROUP

Institution for
Social and Policy Studies

YALE UNIVERSITY
New Haven, Conn. 06520

HE 012274

2

THE COLLEGE CURRICULUM AND THE MARKETPLACE:

ACADEMIC DISCIPLINES AND THE TREND

TOWARD VOCATIONALISM IN THE 1970s

by

Roger L. Geiger

YALE HIGHER EDUCATION RESEARCH GROUP
WORKING PAPER
YHERG-40

January 1980

Roger L. Geiger
Research Associate
Higher Education Research Group

The research reported in this paper has been part of the work conducted by the Yale Higher Education Research Group. It has been supported by research funds from the Lilly Endowment grant for the comparative study of academic organization and governance.

In the interest of fullest possible circulation of information and ideas, the Higher Education Research Group reproduces and distributes these Working Papers at the request of authors who are affiliated with the Group. The views expressed are those of the authors.

A list of the Working Papers of the Group may be obtained from the address below.

Higher Education Research Group
Institution for Social and Policy Studies
Yale University
1732 Yale Station
New Haven, Connecticut 06520

THE COLLEGE CURRICULUM AND THE MARKETPLACE:

Academic Disciplines and the Trend Toward Vocationalism in the 1970s

ABSTRACT

What is taught, what is learned, and how they relate to graduate employment: this inquiry endeavors first to bring these diffuse concerns into a structured frame of reference, and then to interpret the general direction of change in this decade. Instead of considering the most renown universities, those most often taken to represent American higher education, the focus here is on the broad middle of the academic hierarchy and on the average college graduates who immediately enter the labor market. At the beginning of the seventies a consensus reigned that these institutions ought to emulate to the best of their abilities the academic leaders by keeping pace with the extraordinary prolifieration of disciplinary scholarship. That this type of specialized education bore little relation to the likely occupations of disciplinary graduates was not of great importance until the graduate labor markets began to tighten. This inaugurated an accelerating trend toward vocationalism which has induced these institutions increasingly to stake their futures and their discretionary resources upon instrumental subjects. These developments have contributed to a deterioration of the former consensus on academic values and a certain demoralization of disciplinary faculty. Yet, from the perspective of Thurow's job-competition model, the large increase in instrumental graduates (outside of some technical fields like computer science) does not represent a better articulation of education and employment, nor does it constitute a productive social investment. Thus, the traditional mission of American undergraduate education -- disinterested learning for cultural enrichment and intellectual development -- previously overshadowed by the academic revolution, now appears in danger of being displaced by vocational programs of dubious value.

For 1976 the American Association of Higher Education chose for the theme of its annual conference "the relation between higher education and work" (Vermilye 1977). The choice was a topical, even an urgent concern for the assembled representatives of the institutions and supra-institutional agencies of American higher education. By this date it had become clear that the traditional relationship between a bachelor's degree and the preferred occupational slots in the nation's labor markets had weakened or collapsed in numerous fields. More young people were graduating from college than the sluggish markets for highly trained personnel could absorb, and income differentials between college and non-college workers appeared to be narrowing significantly (Freeman 1976; Freeman & Halloman 1975). The threat to the well-being of American colleges and universities was implicitly recognized. Everyone knew that there would be smaller age cohorts entering college by the end of the decade; perhaps a dwindling proportion of those small cohorts would find it economically enticing to go to college (cf. Dresch 1975).

If one could summarize the sentiments of this AAHE Conference in a few words, obviously an oversimplification, it would be that this impending crisis should be resolved in the workplace rather than on campus. If employers would grant greater recognition to the benefits of higher education, and if more ingenious ways could be arranged to provide more education to those already employed, American colleges and universities would be guaranteed a sufficient clientele to maintain their accustomed level of activity. Although this would appear to be a classic "I'm all right, Jack" response to an unsettling challenge, the representatives of higher education may have been prevented from contemplating fundamental changes on their side by some deep-seated organizational reflexes. From the outside it may appear a simple matter to alter a college curriculum in order to provide more vocational or practical content. The college course

list today is usually described as a supermarket or cafeteria; why not just replace some of the items, or rearrange the merchandise? Unfortunately, the comparison made by a college president that changing a college curriculum is analagous to moving a cemetery is probably closer to the truth. What appears on the surface to be fragmented, atomistic and maleable in fact possesses a resilient inner structure highly resistant to external forces. Whether tommorow's college graduates could be equipped with different skills that would make them more prized in the labor market, and whether they should be, are questions that cannot be treated in isolation. They go to the heart of what it is colleges do, and how they are organized to do it. Nor is the nexus that binds together these disparate concerns difficult to find. It lies in the classroom where professors who are charged to teach transmit knowledge to students who have come to learn.

College knowledge and competition for jobs

Teaching and learning--the transmission of knowledge--are so obviously the central tasks of higher education that it scarcely needs mention. In fact, the large body of research concerned with the outcomes of higher education virtually takes this for granted. Instead such literature concentrates on the changes college produces in behavior, earnings and life changes; and how these changes vary for different categories of students, or for different types of institution (Astin 1977, Bowen 1977, Feldman & Newcomb 1973, Pace 1979, Solmon & Taubman 1973). The subject of what students learn is frequently addressed by college officers and spokesmen for higher education, who are innately disposed to make rather far-reaching and unsubstantiated claims in this regard. A similar distortion occurs whenever controversies over curriculum arise: relatively minor changes in the courses students take are assumed to produce substantial effects in the eventual mental make-up of graduates. However, in order to distinguish how a graduating senior differs from an entering freshman, and to consider why

that graduate should receive a premium in the labor market, it would seem necessary first to obtain a realistic assessment of what that student might have learned during four years of attending classes. Although this is a potentially an immense task, the problem can be clarified considerably by undertaking a rudimentary classification of the things that colleges teach.

First there is the large and unwieldy category that could be called general knowledge. This would encompass both basic skills acquired or refined, plus the diverse bits and clumps of information that are picked up during the course of undergraduate studies. In both cases any benefit derived from this knowledge is likely to be indirect, and any subsequent utility a random occurrence. Basic skills would certainly include fundamental mathematics, like calculus or statistics; and would also include the improvement of language skills or acquiring general competence in one of the fine arts or a foreign language. Information of a general character (i.e. with low disciplinary specificity) is available in profusion from entry-level courses in the social sciences, literature, history, or introductory science courses. Much of the first two years of college is in fact designed to augment the student's stock of general knowledge. The importance of this aspect of knowledge should not be underestimated. Superficially perhaps the most distinguishing features of a college graduate are due to the greater quantity and (because it is learned from highly competent sources) superior quality of their general knowledge--their facility with language, their acquaintance with a wider universe of facts, etc. . . . But the difference goes deeper. Wider general knowledge should go along with greater ability to size-up problems, make causal inferences, to deal intelligently with matters transcending ones immediate reals of experience.

Beyond these types of general knowledge students are invariably required to attain more specialized knowledge in order to qualify for a bachelor's degree. However, the specialized knowledge a student concentrates in may take either of

two readily distinguishable forms--disciplinary knowledge or instrumental knowledge.

Academic disciplines provide the infrastructure of American colleges and universities. They are the usual bases for department, as well as most course offerings. Yet, an academic discipline is a difficult entity to define. It is at once a tangible organization, but one erected upon a largely implicit, exceedingly messy, sometimes badly overgrown cognitive foundation. This foundation, the cognitive domain of the discipline, is a well-mapped territory where each practitioner occupies a definite location; and it is sections of this domain that are marked out and offered to students in the form of courses. The cognitive domain itself is both closed and constantly expanding. The organizational imperative of disciplines is the constant expansion of their base, the continual discovery of new knowledge along with periodic reassessment and consolidation of the old. However, this cumulation of knowledge only takes place within a structure of assumptions that order the material, determine what is relevant, and establish what methods are acceptable. This is primarily because the phenomenon under investigation must be to some extent isolated in order to be understood. It is also due to the fact that the questions to be asked and the methodology to be employed are a function of the body of existing knowledge in the discipline. The essential point, then, is that disciplinary knowledge, by origin and by nature, serves the special purposes of the discipline that engenders it. It is only a partial reflection of the real world, refracted through the particular limiting conditions inherent to that cognitive domain. This is perhaps most evident in the social and behavioral sciences, where each discipline examines human activities from a distinctly different perspective. But it is also true for the discipline of history, which depends upon enormous selectivity, amorphous abstractions and "vast impersonal forces" to fashion the real world of the past into meaninful patterns.

The natural sciences are more obviously recondite and theoretical, and more single-mindedly dedicated to expanding their own particular frontiers of knowledge.

Instrumental knowledge, by way of contrast, exists for an ulterior end. It is intended to be useful in a practical or vocational sense--to permit those who have it to do things that are valued in the workplace. Instrumental subjects in the university may be organized much like academic disciplines, but they ultimately operate on different principles. The creation of new knowledge may be an important objective, but it is not an end in itself. These subjects are more likely to borrow general features of their intellectual technology from the disciplines (theory, concepts, methods), rather than generate their own. And, when it comes to evaluation, the ultimate criteria of success lie in the realm of application.

It is commonly argued that much of the learning in college takes place outside of the classroom, that the experience of college produces important socialization effects and contributes to some aspects of moral development (cf. Bowen 1977). However, even though these things might be learned in college, they are not explicitly taught there. This makes them in some sense optional outcomes. A student living at home while attending classes (or not attending classes at all), for example, might be quite impervious to these types of socialization effects. The case for positive moral effects of college is even more dubious. The prosaic truth is that a bachelor's degree only signifies that the recipient has at one time or another completed the requirements for the 32-40 courses listed on his or her transcript. The content of these courses can be classified as general, disciplinary or instrumental knowledge.

The exact mix of these forms of knowledge would naturally vary for each individual graduate. It is nevertheless possible to assign graduates to either a disciplinary or an instrumental orientation according to their field

of concentration (Table 1). Although some fields are more difficult to classify than others, the most ambiguous cases are in specialties of little numerical importance. There is no ambiguity about the general trend in this decade away from disciplinary majors in favor of the instrumental subjects.[1] This trend is all the more striking in light of the steady decline in education majors. In the class of 1977 business majors surpassed education graduates as the largest category of graduates, comprising one of every six bachelor's degrees. It would be easy to attribute this trend solely to the pressure of an ever-tightening job market. In fact, it will be shown that disciplinary graduates and instrumental graduates face fundamentally different market conditions. First, however, it is necessary to specify in some detail the linkages between higher education and jobs.

Several aspects of this relationship have been clarified by Lester Thurow (1975) in an influential challenge of neo-classical economic doctrine. His starting point is the finding, corroborated in a number of studies, (cf. Collins 1979), that productive labor skills are largely learned on the job. This means that potential employees, especially for entry level positions, are not really offering their skills for hire; they are seeking training opportunities in order to acquire the skills that will in time make them productive and efficient workers. Thus the competition is for jobs, not wages as in neo-classical economics; and Thurow accordingly labels his perspective a "job competition model." It is in the interest of employers to choose employees who will be able to produce more than they cost in the shortest possible time. The fitness of a candidate for a particular job depends upon his or her "backgrcund characteristics" which indicate appropriateness for a position and/or relative ability. Fitness also depends upon the amount of "training costs" that will have to be borne by the employer. Higher education is relevant to both these considerations. A bachelor's degree as a background characteristic has long

Table 1: Bachelor's Degree Awarded by American Colleges and Universities by Subject. (N = thousands)

	1964		1968		1972		1976		1977	
	N	%	N	%	N	%	N	%	N	%
ACADEMIC DISCIPLINES:	222.8	48.4	324.9	51.4	419	47.2	405.6	43.8	391.1	42.1
Biological Sciences	22.8	5.	31.8	5	37.3	4.2	54.3	5.9	54.2	5.8
Letters	37.8	8.7	61	9.6	73.3	8.3	51.5	5.6	47.5	5.1
Fine Arts	12	2.6	11.3	1.8	21.9	2.5	30.7	3.3	30.7	3.3
Foreign Language	12.4	2.7	19.3	3	18.8	2.1	15.5	1.7	14.3	1.5
Mathematics	18.6	4.1	23.5	3.7	23.7	2.7	16	1.7	14.3	1.5
Physical Science	17.5	3.8	19.4	3.1	20.7	2.3	21.5	2.3	22.6	2.4
Psychology	13.6	2.9	23.8	3.8	43.1	4.9	49.9	5.4	47.8	5.1
Theology	2.7	.6	2.3	0.4	2.6	0.3	3.7	0.4	4.1	0.4
Social Science	78.3	17.	123.8	19.6	158.8	17.9	127.3	13.8	118.3	12.7
Other	7.3	1.6	8.7	1.4						
Area Studies					2.8	0.3	3.1	0.3	3.	0.3
Interdisciplinary					16	1.8	32.1	3.5	34.2	3.7
INSTRUMENTAL	237.7	51.6	307.6	48.6	465.9	52.5	520.1	56.2	537.2	57.9
Agriculture & Forestry	6.1	1.3	7.3	1.2	13.5	1.5	19.4	2.1	21.5	2.3
Architecture	.6	.1	3	0.5	6.4	0.7	9.1	1	9.3	1
Business	56.1	12.2	79.5	12.6	122	13.7	143.4	15.5	153.8	16.6
Computer Science					3.4	0.4	5.7	0.6	6.4	0.7
Education	112.5	24.4	134.9	21.3	191.2	21.5	154.8	16.7	145.4	15.6
Engineering	33.4	7.2	37.4	5.9	51.2	5.8	46.3	5	49.7	5.4
Applied Fine Arts	4.	.9	6.9	1.1	9.7	1.1	11.4	1.2	11.4	1.2
Health Prof.	11.6	2.5	17.4	2.8	28.6	3.2	54	5.8	57.8	6.2
Home Economics	4.9	1.1	7.4	1.2	12.1	1.4	17.4	1.9	17.6	1.9
Journalism/Communications	2.2	.5	4.4	0.7	12.3	1.4	21.3	2.3	23.2	2.5
Library Science	.5	1.4	.8	1.3	1	0.3	.8	0.4	.8	0.5
Military Science	2.7		2		0.4		1.2		1	
Other	3.1		5.5		1.5		2.1		2.6	
Public Affairs					12.6	1.4	33.2	3.6	36.7	4
TOTAL	460.5	100	632.3	100	887.3	100	925.7	100	928.3	100

Source: National Center for Educational Statistics, Digest of Educational Statistics, 1966, 1970, 1975, 1978.

been a screening device for certain levels of employment since it is a fairly reliable and convenient indicator of preferred social and intellectual qualities. In technical fields a B.S. also signifies that part of the anterior training costs have been covered by the employee. An engineer, for example, still learns much of his trade on the job, but his education provides a prior and necessary base upon which this learning occurs. Since each job candidate's qualifications are to some extent different, Thurow visualizes the job seekers as forming a "labor queue" with the most desirable employees at the head of the line.

The situation of instrumental graduates can be readily described in terms of Thurow's framework. Their occupationally specific education has groomed them for one, and sometimes only one, distinct labor queue. Their priority in that queue is unchallengeable by any outsiders. One can assume that they possess a selective affinity for their chosen career; that this has been further reinforced through socialization during their specialized education; and in most cases that some of the potential training costs have already been borne by the candidate. The position of any instrumental graduate in his or her specific labor queue, then, ought to depend largely upon factors related to schooling.

The case of disciplinary graduates is far more ambiguous. For them the relationship between what is learned in college and skills or abilities that will be utilized on the job is exceedingly loose. The dimensions of this relationship may be exposed by posing the question: how important is the quality of disciplinary knowledge (as recognized in the discipline) learned by the disciplinary graduate for his or her opportunities after graduation? In other words, do the level of instruction received and the relative achievement of a graduate have a significant influence upon at least the immediate postgraduate career? The answer, not surprisingly, depends upon

what the disciplinary graduate attempts to do. The following table estimates the significance of the content of a disciplinary bachelor's degree for entry to and subsequent performance in six common career alternatives.

TABLE 2 Importance of Disciplinary Knowledge for Disciplinary Graduates in Possible Career Paths

	entry	performance
Graduate school in discipline	+	+
Professional school	+	0
Teaching (in subject, post-prim.)	0	+
Discipline-related work (?)	0	0
Civil service positon	-	-
Teneral training position (e.g. management, sales)	-	-

KEY: + = large importance
0 = little importance
- = no importance

The first two categories, the ones for which disciplinary knowledge is most important, do not pertain to occupations at all, but rather to the option of undertaking more advanced and more specialized schooling. (Nevertheless, the influence of this sector upon the labor markets for college graduates will be apparent below.) Here entrance is determined largely by college achievement (course grades) and relative scores on standardized tests which reflect course content (GRE, LSAT, or MCAT). Undergraduate disciplinary knowledge will obviously be highly relevant for a student continuing on in graduate school; it will be somewhat relevant in medical school; and it will probably play a comparatively minor role for the student of law.

For those who enter post-primary teaching (i.e. who have disciplinary majors and minors, plus a teaching certificate) the content of their courses should retain some significance. This category has always constituted a large proportion of the disciplinary graduates. The widely publicized deterioration of the market for teachers during the 1970s has undoubtedly affected the career choices of many students. Statistics on the number of post-primary teaching candidates are not available, but there is no reason to think that

their situation would be dissimilar to elementary education majors. That group declined 35% in absolute numbers from 1972 to 1976, or from 10½% of all bachelor's degrees to just 6½%. It seems most probable, then, that the weakening of this single market for college graduates accounts in itself for a portion of the overall decline of disciplinary majors.

The category of "discipline-related work" could be regarded as largely hypothetical. While one could cull hundreds of such jobs from publications on careers, there are for the most part few positions of this type, and the disciplinary knowledge they require is likely to be a small and rather perfunctory part of the discipline's cognitive domain. The English major fortunate enough to land a job as an editorial assistant will be operating quite differently than in a literature class. Biology or chemistry majors might find more jobs to choose from in their subject, but they would probably involve something like operating sophisticated instrumentation. Tasks requiring the kind of theoretical grasp that academic disciplines routinely require are generally assigned to workers with demonstrably greater competence--i.e. with graduate degrees or considerable relevant experience.

The final two categories define a general labor queue for college graduates covering both the public and the private sectors. Here what is learned in college classrooms has little direct bearing upon the activities of the workplace. There are a few or no anterior skills required because these positions represent, explicitly or implicitly, training opportunities. Hence, this market can be conceptualized for the purposes of this essay as a single, undifferentiated labor queue. In fact, for actual matching of applicant and job a great deal of differentiation must take place. However, this would be done on the basis of a variety of background characteristics besides college major. With the collapse of the teaching market in this decade the general graduate labor queue has perforce become the primary job-hunting area for

disciplinary bachelors. However, they have no monopoly in these markets. They might have to compete with instrumental bachelors who have "spilled over" from specialized labor queues with excess graduates. And, the most desirable training slots might go to general business majors in the private sector, or public administration graduates in the civil service. Nevertheless, disciplinary bachelors must still find their relative places in the general graduate labor queue. Furthermore, it should be evident that the specific contents of their college major will be of no direct use for landing or laboring in these potential jobs. This raises the question once more, but in a more specific and acute manner, of what college contributes to the suitability of disciplinary graduates for general positions.

A wide variety of arguments have been presented to the effect that a college education is largely a screening device of employers for selecting relatively high intelligence and desirable social characteristics (cf. Dore 1976). This is undoubtedly an important factor operating with the graduate labor markets, but it is not sufficient in itself to explain the relation between schooling and work. Screening for intelligence could be accomplished more efficiently through existing standardized tests, and socialization might be done more reliably at finishing schools. The over-riding purpose of college is cognitive learning; any analysis that ignores this fact is certain to end in facile cynicism (cf. Collins 1979). This means, then, that the traditional and often hackneyed claims about the intellectual benefits of a college education must be given serious consideration in order to ascertain the qualifications of disciplinary graduates. There is an immediate problem, however, of distinguishing the alleged benefits of general knowledge, acquired more or less by all graduates, from those of disciplinary knowledge, the special attribute of the disciplinary graduate.

There is little guidance in the literature for making this distinction.

Studies on the cognitive outcomes of college are difficult enough to interpret without even approaching these nuances. But, one can still hypothesize an ideal-typical importance for disciplinary knowledge--a residue of intellectual capabilities that remain with the graduate after course contents are forgotten. These are sometimes called the process products as opposed to the end products of learning (Dore 1976). More specifically, they include "the most basic learning processes":

> those by which we abstract order from our experience and in the process elaborate new means of discrimination for the distillation of further order. The essential product of such processes is not knowledge in the discursive sense, but is manifest rather as aptitude, skill, capacity, motivation, discrimination, intuition and rationality. (Hawkins 1973, p. 491).

Advanced instruction in a discipline ought to accomplish such learning on a very high level. While the first two years of college are primarily intended to acquaint the student with broad theoretical issues and to stimulate reflection on various aspects of the human condition, advanced learning demands more controlled thought based upon the accumulated knowledge and reigning methods of the discipline. It is this type of intellectual endeavor that should develop and fortify a student's capacity to deal with "cognitive complexity" (Spaeth 1976). Working within the specific paradigms of disciplines necessarily develops deeper mental paradigms governing ways of thinking: the relationship between factual evidence and general conclusions; how to see problems from different perspectives; the ability to collect, organize and present knowledge; critical analysis; the capacity for self-directed learning; and, emulation of the intellectual standards of disciplinary scholarship. Such themes could be elaborated ad nauseum. However, the essential point is that these qualities cannot be assimilated through introductory textbooks--the dry distillation of past research. They require the active participation of the student, even in the rudimentary and contrived setting of the classroom, in

the continual ferment of disciplinary scholarship.

If this line of thought is something less than a revelation it would be because American higher education is virtually predicated upon the assumption that four years of undergraduate study produces benefits such as these. And, most well-placed observers would probably agree that properly prepared disciplinary graduates exhibit these qualities. However, not many would go so far as to argue that all 400,000 of the 1976 disciplinary bachelors were imbued with these intellectual virtues. This consideration somewhat complicates the question of the value of a disciplinary degree.

It is both natural and obvious that the levels of achievement of college graduates would vary widely. The extent of cognitive learning correlates most strongly with the initial abilities of students (Astin 1973). Given the differential selectivity of American colleges, these students are distributed according to abilities over institutions of vastly different quality. Alexander Astin has noted, that, "the least able students in highly selective colleges are in general academically superior to the most able students in the least selective colleges" (1971, p. 31). It is difficult to establish reliably just what the impact of college quality upon learning would be for students of equal abilities. Nevertheless, the conclusion of Lewis Solmon (1973) that the relative benefits of high quality institutions were disproportionately greater for high ability students seems quite plausible. It would seem a likely hypothesis that the incidence of the intellectual benefits of disciplinary study would exhibit a similar pattern, i.e. that disciplinary graduates of high ability who attended higher quality instituions would most strongly manifest the mental attributes expected and desired of graduates. The reasons for this are inherent to disciplinary knowledge (the means employed to achieve this end). First, it is recondite in the sense that it demands the comprehension of considerable prior knowledge of facts and methods. Secondly, insofar as disciplines are alive

they are occupied with the changing understanding of the phenomena in their cognitive domain. "Vital" disciplinary knowledge is consequently complex and difficult because it largely consists of puzzles that have only recently been solved.

The lasting benefits of advanced disciplinary study, then, would seem to depend upon ability, motivation and institutional setting. Students of modest abilities with passive or perfunctory approaches to their course work and located in departments remote from the intellectual life of the disciplines would doubtless still acquire a certain amount of casual knowledge; however, they would be unlikely to cultivate the deeper mental pradigms that constitute the residual benefits of disciplinary training. Moreover, there is good reason to suspect that a large proportion of the disciplinary graduates competing for preferment in the general graduate labor queue fall within this category.

Those students who are most successful in their undergraduate studies have a high propensity to continue on to graduate or professional school. Elite universities now send three-fifths of their graduating classes directly to graduate and professional schools, and perhaps another fifth intend to follow at some later date. A global estimate of the proportion of disciplinary graduates who immediately pursue post-graduate students in the disciplines, plus first-year graduate students in the disciplines, plus first-year students in law and medicine (154,000 total for 1976) with the number of disciplinary graduates (405,600 for 1976). From this it seems likely that three of eight (38%) disciplinary graduates stayed in school, although the percentage was certainly greater for men (46%) than it was for women (28%).[2] Thus, the obverse meaning of this fact is that the disciplinary graduates who entered the labor market represent a negatively selected population. They are heavily drawn from the academically less successful half of all disciplinary graduates--those who have been least well served by their disciplinary studies.

Disciplinary graduates who enter the general graduate labor queue would once have been considered the stereotypical product of American higher education. Presently they constitute no more than 25% of each year's graduating class. Although they are probably not the most gifted graduates of the system, they are nevertheless intellectually able in comparison to the general population. Some 45% of young Americans go to college after high school (60% of high school graduates), yet according to the Bureau of the Census only 20% of an age cohort manage to graduate from college by age 24. Open admissions to American colleges has not yet degenerated into open commencement. Some slackards obviously do make it through (as they always have), but for most of the unfit the course is simply too arduous, too frustrating, and finally too long. A college degree is consequently still a significant "screen", requiring ability and application, and in the end guaranteeing superior general knowledge and basic skills. If the disciplinary graduates in the general graduate labor queue are not the cream of this population of graduates, neither are they the dregs. Students with the weakest academic abilities preponderantly avoid concentrating in a discipline. This amorphous quarter of recent graduating classes essentially are, and for convenience may be called, the "middling grads."

When the educational experiences of the middling grads is compared to that of their more able classmates bound for graduate study, fundamental differences emerge. Between the future graduate students and their faculty mentors a symbiotic relationship exists: Professors creating and disseminating knowledge according to the culture of their discipline provide these students with information of immediate value for their career preparation, while also giving them challenging material for developing their intellectual prowess. The middling grads, however, have somewhat less ability and considerably less motivation to follow their teachers into the recondite and esoteric reaches of disciplinary scholarship. Their minimal accomplishments consequently do not

greatly improve their powers of ratiocination. The result is a lack of congruence between the disciplinary culture and the needs of the middling students: These students tend to hinder the professors' fulfillment of their disciplinary roles, while the advanced disciplinary instruction they receive offers them little of lasting benefit.

This picture may be an oversimplification, but the dysfunctional relationship it reveals between students and teachers within a substantial part of American higher education is not. The existence of this dysfunction has in fact given rise to powerful pressures that have acted upon American higher education in two related but different ways. First, the disciplinary curriculum has come under heavy pressure as a result of student defections and the reactions of college administrators fearful of losing enrollments. Secondly, the weakness of the disciplinary curriculum has had repercussions on the organizational influence of the disciplinary faculty. As the importance of their organizational technology has depreciated, so has the weight of disciplinary criteria in the complex equations determining higher educational policy at all levels. Both these developments are among the most important of this decade for American colleges and universities. However, in order to distinguish what is revolutionary about these movements from what is essentially a reassertion of ubiquitous forces it is necessary to view the developments of the seventies in a larger historical perspective.

The academic revolution and beyond

In a famous essay written in the mid-fifties, David Riesman depicted American higher education as a long, snake-like procession. At its head were perhaps 100 institutions of good academic quality more or less keeping pace with the leading institutions. In the middle ranks things became more muddled: institutions had to respond to incompatible incentives to emulate what they perceived to be the

trends among the academic leadership, yet also meet the parochial demands of their local constituencies. At the tail of the procession Riesman found intellectual torpor among institutions that "are colleges only by grace of semanitic generosity" (Riesman 1956, p. 49). Although this essay is sometimes interpreted as indicating a process of follow-the-leader, Riesman's ultimate point is quite different. Despite a certain degree of "academic isomorphism" near the front of the procession, the growing complexity of American higher education seemed to assure "that no single prestige system can dominate the great variety of subsystems" (p. 24).

Only a decade later, Riesman, in collaboration with Christopher Jencks, described an entirely different situation. An "academic revolution," in the fifties just perceptible among the top third of institutions, had by the late sixties transformed the bulk of American higher education (Jencks & Riesman 1968). The underlying cause of the revolution was the unprecedented expansion of higher education, but the soldiers of the revolution were young Ph.D.'s, trained in disciplinary scholarship at research universities, who staffed the burgeoning departments and multiplying campuses. With them and partly because of them came the tacit acceptance of a single model throughout most of the academic procession. This was the "university college" of the leading academic institutions which essentially prepares its students for graduate and professional schools through an immersion in advanced disciplinary scholarship. Such a model implicitly assumed a unidimensional standard of merit based upon academic excellence which would apply in different ways to both students and faculty. During the 1960s, then, the university college rather suddenly became the "fruition of the academic revolution at the undergraduate level," and "the model for the future." Many of the special-interest colleges near the tail of the academic procession were able to resist its allure. However, to appreciate the true extent of the academic revolution it is best to exchange Riesman's metaphor for the more concrete Carnegie classification of institutions of higher education (See Table 3).

TABLE 3: Carnegie Classification of Institutions of Higher Education*

	1976 enrollment ('000s)	%	status
Research Universities II	1,144.	16.5	+
Research Universities II	802.7	11.6	+
Doctorate-Granting Universities I	804.8	11.6	0
Doctorate-Granting Universities II	304.6	4.4	0
Comprehensive Universities & Colleges I: Public	2,055.8	29.6	0
Comprehensive Universities & Colleges I: Private	571.6	8.2	-
Comprehensive Universities & Colleges II	542.1	7.8	-
Liberal Arts I	153.5	2.2	+
Liberal Arts II	377.7	5.4	-
Specialized Institutions (undergraduate)	182.8	2.6	-
TOTAL	6,939.6	100	

KEY: + = true university college
0 = quasi university college
- = non university college

* Not including two-year colleges, predominately graduate or non-degree specialized institutions and instituions of non-traditional study.

SOURCE: Carnegie Council on Policy Studies in Higher Education, A Classification of Institutions of Higher Education. Revised Edition, Berkeley, California: 1976.

The classification attempted in Table 3, while admittedly crude, still provides a clearer picture of the head, middle and tail of the academic procession. Since the enrollment figures given here include graduate and professional students they may only be employed for schematic purposes. Nevertheless, it would seem that about a quarter of undergraduates are in degree-granting institutions of the university-college type, where it could be assumed that their studies are

largely a prelude to graduate or professional schools. A similar proportion attend institutions clearly below the threshold where academic criteria become a major concern. The academic revolution may have affected this latter type of institution in numerous ways, but either their traditional mission or their limited resources have generally prevented them from accepting the challenge of competition in the academic mode. This leaves perhaps half of all undergraduate students in colleges and universities that have been substantially transformed by the academic revolution. In fact, most of the 300+ public institutions in these categories (compared with only 29 private schools) may be said in a fundamental way to be the creatures of the academic revolution. Many are teachers colleges that have raised themselves to university status by enhancing their academic stature, strenghthening the faculty and offering graduate degrees. Others are branch compuses of research universities, and still others are units of multicampus systems, such as the California State Colleges, SUNY and CUNY. In either case a fairly comprehensive offering of specialized courses and a partial faculty orientation to research are institutionalized throughout the system. It was in this large middle of American academia, then, and more precisely in its disciplinary departments, that the transformation described by Jencks and Riesman was most revolutionary.

The accomplishments of the academic revolution should be given their due. From the standpoint of disciplinary scholarship it constituted an extraordinary upgrading of the undergraduate curriculum. And, the research effort of American universities during this period set the standard for the world. What is most astonishing about these developments in comparison with other national systems of higher education is the breadth that was achieved in high quality undergraduate education and in faculty involvement in the frontiers of disciplinary research. If Jencks and Riesman have provided a rather ambivalent chronicle of the academic revolution, Talcott Parsons and Gerald Platt have written an apotheosis of its

principles. The American University (1973) is predicated upon the revolutionary axiom that graduate training and research is the core sector of the university where the commitment to cognitive rationality is translated into the canons of the various disciplines. When these same disciplines are taught at the undergraduate level the professors function as role-models and socializing agents for students, thereby upgrading students' cognitive rationality while simultaneously promoting its internalization and integration. As indicated earlier in this paper, this process operates admirably within at least the elite sector of American higher education--the sector that provided the inspiration for the Parsons-Platt ideal type. But, realistically, how effective has it been for the middling grads, especially the half of American collegians clustered in those middling institutions created by the academic revolution?

Neil Smelser touched on just this question in an Epilogue to The American University. He suggested that the cognitive upgrading that occurred in those middling colleges and universities was probably accompanied by a considerably diminished degree of socialization, and that this would cast some serious doubts upon its impact on graduates. However, Smelser's highly theoretical reservations actually came in the wake of a more widely publicized, and more policy-oriented, reaction to the academic revolution--the Report on Higher Education (1971) sponsored by the H.E.W. Office of Education and chaired by Frank Newman. The Newman Report, as it is usually called, specifically condemned several integral features of the academic revolution or the Parsons-Platt conception of higher education caused by the emulation of the research universitiy and "reforms designed to make undergraduate education more like graduate education." It also criticized the "lockstep" whereby students reflexively followed high school with four years of college, and disapprovingly noted the uncritical and inappropriate valuation that American society then seemed to be placing on college credentials. The authors of the Newman Report, like Smelser, felt that the current system

was especially failing to meet the needs of students at non-selective institutions in the middle of the academic ranks. Their remedy for these deficiencies basically involved promoting a wider range of options in undergraduate education. They particularly wanted to interrupt the usual pattern of college-going, so that students could acquire the skills they felt they needed when they felt they needed them. The Newman Report thus leads to a series of conclusions that are diametrically opposite those implied by the Parsons-Platt analysis. It puts forth "skills and training" as the ends of college learning--i.e. the direct products of cognitive investment; whereas the process products of a college education emerge from The American University as the most important outcomes. Instead of socialization to rational modes of behavior in the university, the Newman Report would like young people to become socialized to the world of work, and to relate to the university as a recurrent source of instrumental knowledge. For both sets of authors no particular subjects are inherently necessary to the curriculum; however, Parsons and Platt would require that courses conform to the rigorous professional standards of the academic mode, while the Newman Report advocated scuttling that professionalism in order to introduce practitioner-knowledge (and ideally the practitioners too) from the workplace. This list of contradictions could obviously be continued, but the fundamental dichotomy it represents should by now be fully apparent. Moreover, it cannot be bridged by arguing that each alternative is appropriate to a different species of student: the issues involved are in fact universal ones. They could be debated just as fiercely at the end of the seventies as they were at the beginning. Nevertheless, the writings that have just been discussed, and the wider literature they represent, are specific to a particular stage in the development of American higher education. They constitute the recognition of and the coming to terms with the academic revolution of the 1960s.

The hypertrophy of instrumentalism

It has now been approximately a decade since the consumation of the academic revolution. During these years the university college depicted by Jencks and Riesman has certainly ceased being the model of the future, but on the other hand, the counter-revolution advocated in the Newman Report has also failed to materialize. The revolution nevertheless has clearly begun to unravel. Not, of course, at the leading institutions: there academic life largely continues to be governed by the imperatives of disciplinary inquiry. But in the middle ranks, where the academic revolution brought the disciplines confidently into the ascendancy, their position has now eroded. And, so has their confidence. Institutions that during the 1960s sought to boost their academic prestige have lately been concerned about establishing remedial programs. If they should be so fortunate as to be able to make new appointments, they will undoubtedly be in instrumental rather than disciplinary departments. In some ways the momentum of the academic revolution has scarcely been slowed, most notably perhaps in the continuing fragmentation and specialization of the disciplinary curriculum. But, in other fundamental matters the reaction has been evident. In particular, the cultivation of academic values during the 1960s caused a significant boost in the prestige and organizational standing of faculty and departments, but the tendency of the 1970s has been for academic priorities to be eclipsed by competing claimants. The disciplines, or rather the faculty in their disciplinary roles and the departments which organize disciplinary interests, have been finding themselves increasingly on the defensive.

The reasons most commonly invoked to account for this defensiveness are basically external to the disciplines themselves. The widespread institutional austerity of the late seventies significantly diminshed the resources supporting research and scholarship. The cessation of growth in full-time, four-year programs and the relative immobility which this imposed upon the academic

profession have had a chilling effect upon the ambitions of both institutions and individuals. In addition, this essay has attempted to argue that there were weaknesses inherent in the situation of the disciplines. The inertia of the academic revolution carried narrowly disciplinary criteria into the education of middling grads and the curricula of middling institutions where they were scarcely appropriate. However, the disciplines also undermined their own position through their very success. The victory of a sophisticated and specialized disciplinary curriculum occurred at the expense of the notion of general education. Frederick Rudolph concludes his history of the American undergraduate curriculum with the observation that efforts to sustain general education amount to "artificial respiration of a lifeless ideal" (1977, p. 288). The notion that an educated person ought to be acquainted with certain particular subjects was obviously done in by the enormous expansion and specialization of disciplinary knowledge together with the organizational imperatives of disciplinary departments. Its disappearance, however, has left the disciplines naked in the marketplace. The "history of Western Civilization," for example, could make a special claim for inclusion in the curriculum as an embodiment of our heritage, but no such claim carries credibility for "Selected Problems in European History." The imperium of the New Criticism in English departments has undermined the humanistic claims of the study of literature in much the same way. Of course, the loss of sacrosanct status by some subjects made more room in the sun for new disciplines, pseudo-disciplines or disciplinary hybrids. However, the prevalence of the notion that all subjects are inherently equal with respect to a bachelor's degree has brought all disciplines and instrumental subjects into competition for student enrollments.

From what has already been said about disciplines it should be clear that they are not well-suited for this kind of competition. Disciplines are essentially closed intellectual domains. Although they present intellectual excitement and challenge to those within, their allure is usually less obvious to outsiders.

Departments in recent years have attempted to boost their F.T.E.'s by basing courses upon popular and "relevant" contemporary issues. But, this all too often has meant abandoning the well-defined puzzles of the disciplinary matrix in order to grapple inconclusively with intractable problems of the real world. Interdisciplinary courses can present similar difficulties by drawing the teacher outside his or her domain of competence. Insofar as they ask teachers to teach what they do not in fact know, courses designed for marketability raise some serious pedagogical questions. In any case, such courses represent little more than the fringe of the disciplinary curriculum. The disciplines as a whole have been losing ground during this decade chiefly to the instrumental or vocational fields.

Liberal learning and instrumental knowledge have coexisted throughout the history of American higher education in ever shifting proportions. The academic revolution, in conjunction with the general disrepute among the young of anything associated with materialism, expanded the disciplinary share of enrollments to what surely must have been a secular peak at the end of the 1960s (recall Table 1). The resurgence of instrumental majors in the 1970s caused the disciplines first to experience a percentage decline and then an absolute decline in the number of graduates. Legislators, public officials and educators disenchanted with the academic revolution could interpret this change as evidence that American higher education was becoming more "useful"--was becoming better articulated with the needs of the nation's economy. But, has this in fact been the case?

The relationship between an instrumental education and a subsequent occupation can take one of three basic configurations. 1) If an instrumental education makes a worker sufficiently more productive in his job to cover the wage premium paid for that education, then it would obviously be economically justified. 2) When an instrumental graduate merely displaces another graduate

by receiving priority in the labor queue for a training opportunity, then the situation is equivalent to a zero-sum game. Or, 3) if an instrumental graduate displaces someone with less education without becoming more effective in the workplace, then the result is the inflation of credentials associated with that position. Credential inflation necessarily involves social costs, even though individuals with credentials may prove to be beneficiaries. The traditional professions naturally have no reason to doubt the legitimacy of their educational base. Typically they rest upon a foundation of theoretical knowledge that is best conveyed in a classroom (engineering, law, architecture, accountancy). Some, especially the health professions, depend heavily upon formalized types of apprenticeship arrangements. Instrumental education in these cases is obviously indispensible for exercising the profession, and sometimes also simulates on-the-job training. Cases 2 and 3 above are most likely to occur in the more amorphous, non-technical professions or recently upgraded fields where the relationship between theory and application is tenuous at best.

In discussing the introduction of business courses in higher education Jencks and Riesman note that "the desire for professional training predated the existence of a body of knowledge needed by practitioners" (p. 203). This is typically the situation in emerging professions. Business schools have made some progress in developing a theoretical and recondite curriculum by incorporating organizational analysis, quantitative techniques, game theory and the case method; however, the real significance of most business education continues to be as a normative control (Collins 1979). Moreover, for most non-technical professional programs the relationship between course work and real work remains uncertain. A recent national report on the state of police education, for example, criticized the emphasis on practical police skills in the country's 1200 programs as sterile and misguided, and recommended strengthening the general education received by police.[3]

The irrelevance of classroom material for the intended profession is hardly a deterrent to students as long as such studies lead to priority in the labor queues, or direct rewards for those already employed. Thus, the competitive environment of the late 1970s in higher education--students desperate for jobs and colleges desperate for students--has been highly conducive to the creation of instrumental programs quite irrespective of their economic justification. And, these forces have been reinforced by conditions in the labor market. Given the surfeit of potential graduate employees, employers tend to give precedence to specialized instrumental graduates for no other reason than to scale down the applicant pool to a manageable size (cf. Dore 1976). This tendancy is further exacerbated by the sinking prestige of disciplinary graduates during this decade and the plight of the middling grads already discussed.[4] However, such employer behavior eliminates jobs from the general graduate labor queue in favor of smaller specialized queues. In the end there is ever greater pressure for colleges to offer, and for students to seek, instrumental specializations.

There is every reason to believe, then, that the evolution away from disciplinary education toward instrumental education will continue into the 1980s. Yet, insofar as the changes at the margin will involve the transfer of what would have been middling grads into emergent instrumental programs, or for that matter into over-enrolled established ones like business, these changes are unlikely to improve either the productivity of graduate labor or the articulation of higher education with the labor market. Rather, it will affect the identity of those who secure certain categories of graduate jobs, and it will create nearly irresistable pressures for continued credential inflation. Thus, individuals who opt for instrumental over disciplinary studies may be rewarded in the short run with better entry-level positions, but their choice may also involve the sacrifice of long-range benefits that defy the calculus of financial interest. The instrumental curricula are generally poorer in the process products

associated with higher education, and also have an even more diluted cultural content than disciplinary subjects. Instrumental graduates consequently may be said to be in an important sense less educated than the middling graduates of the disciplines, and more importantly, less capable of sustaining their intellectual growth over the next 40+ years of their active lives. Collegiate years devoted to the diffuse and formless contents of some instrumental majors, in this sense, represent an opportunity lost.

A college curriculum ultimately represents the competencies of the faculty, and for that fundamental reason it can only change gradually by bits and pieces. Sustained incremental movement in one direction can nevertheless produce rather far-reaching transformations. Thus, the academic revolution of the 1960s caused an unprecedented efflorescence of disciplinary scholarship, but at the same time assured the demise of general education. The vocational trend of the 1970s, whose end is nowhere in sight, has already diminished the prestige and the vitality of the disciplines, and compromised to some extent the intellectual goals of collegiate education; however, it is difficult to believe that these losses have been compensated by increases in the economic productivity of these college graduates. In fact, the motivation for this trend has been as much emotional as economic: both students and institutions have reacted to the weakness of their market positions with a certain sense of desperation. Yet, all evidence would seem to suggest that the connection between the instrumental knowledge that can be conveyed in a college classroom and the instrumental knowledge that is utilized in the workplace is too tenuous and indirect to serve as the chief justification of American higher education. As colleges move to embrace vocationalism as their principal mission, they can only do so at the expense of disinterested learning for which they are far better suited. Ingeneous instrumental programs and sophisticated marketing techniques may be able to keep some institutional balance sheets temporarily in the black--but only by eating away at the moral and intellectual capital on which

those institutions ultimately rest. Consider the local proprietary school which advertises for students by promising, "no extraneous courses: what you do in the classroom is what you'll do on the job." By so saying it defines perfectly the dividing line between colleges and trade schools. If colleges are to regain their former morale, and college degrees their former prestige, some compelling justification must be found for the extraneous--for the developmental and cultural attributes that were formerly associated with a college graduate. The obstacles to such a rehabilitation certainly appear formidable. No consensus seems to exist any longer on the cultural content of general education; the organizational imperatives of academic disciplines are oriented toward the relentless pursuit of new knowledge, not the integration of interpretation of what is already known; and, market forces seem to favor vocationalism regardless of its validity. Yet, shaping the intellectual maturation of young people and widening their cultural horizons has traditionally been the strength and the mission of American undergraduate education. Perhaps during the next decade, and during the educational depression it promises to bring, those institutions which most successfully draw upon that source of strength will prove to be most capable of survival. If not, the vitality of intellectual life throughout the broad middle of the academic hierarchy will deteriorate badly, while the research sector becomes more isolated, more elitist, and possibly more resented as well. This is not an attractive prospect. But, if the pedagogical ideals that have sustained American collegiate education are sacrificed to vocationalism on campus, it is doubtful that they will be respected or supported in society at large.

FOOTNOTES

[1]In a longer perspective it is clear that the enrollment distribution for 1968 is the aberration. From the time that teachers began receiving bachelor's degrees (about 1930) instrumental majors have constituted the majority of American college graduates. Their majority increased steadily during the 1930s, and stood above 60% in the 1950s before declining in the 1960s. However, removing education majors from this category makes the recent trend more stark: in only nine years (1968-77) non-education instrumental majors increased from 27.3% of graduates to 42.3%. A similar level was attained in the early 1950s, but this category then included a far higher proportion of engineers. See, Frank C. Pierson, The Education of American Businessmen, (N.Y.: 1959), Appendices I & II.

[2]National Center for Educational Statistics, Digest of Educational Statistics, 1977-78, (Washington, D.C.: 1978). Note that only full-time graduate and professional students are included in these estimations.

[3]National Advisory Commission on the Higher Education of Police Officers, The Quality of Police Education (1978), reported in The Chronicle of Higher Education, (27 Nov. 1978).

[4]For white males the general graduate labor queue has been, in effect, further shrunk by the impact of affirmative action during the 1970s. It is precisely in the areas where employment criteria are vaguest that affirmative action pressures have been most effective in securing positions for women and minorities.

REFERENCES

Astin, Alexander W. 1971. Predicting Academic Performance in College. New York: The Free Press.

_____. 1973. "Measurement and Determinants of the Outputs of Higher Education" in Solmon & Taubman. Pp. 107-28.

_____. 1977. Four Critical Years. San Francisco: Jossey-Bass.

Bowen, Howard R. 1977. Investment in Learning. San Francisco: Jossey-Bass.

Carnegie Council on Policy Studies in Higher Education. 1976. A Classification of Institutions of Higher Education: Revised Edition. Berkeley, Cal.

Collins, Randall. 1979. The Credential Society: An Historical Sociology of Education and Stratification. New York: The Academic Press.

Dore, Ronald P. 1976. "Human Capital Theory: The Diversity of Societies and the Problem of Quality in Education," Higher Education, 5. Pp. 79-102.

Dresch, Stephen P. 1975. "Educational Saturation: A Demographic-Economic Model," AAUP Bulletin (Autumn).

Feldman, Kenneth A. & Newcomb, Theodore M. 1973. The Impact of College on Students. San Francisco: Jossey-Bass.

Freeman, Richard B. 1976. The Overeducated American. New York: Academic Press.

Freeman, Richard B. & Holloman, J. Herbert. 1975. "The Declining Value of College-Going," Change, (September).

Hawkins, David. 1973. "Liberal Education: A Modest Polemic" in Carl Kaysen, ed. Content and Context. New York: McGraw-Hill, Pp. 491-542.

Jencks, Christopher & Riesman, David. 1968. The Academic Revolution. Garden City: Doubleday.

Newman, Frank (Task Force Chairman). 1971. Report on Higher Education. Washington, D.C.: U. S. Government Printing Office.

Pace, C. Robert. 1979. Measuring Outcome of College. San Francisco: Jossey-Bass.

Parsons, Talcott & Platt, Gerald M. 1973. The American University. Cambridge, Mass.: Harvard University Press.

Riesman, David. 1956. Constraint and Variety in American Education. University of Nebraska Press.

_____. 1978. "1968 Ten Years on," The Times Higher Education Supplement, No. 338 (5 May 1978)

Rudolph, Frederick. 1977. Curriculum: A History of the American Undergraduate Course of Study Since 1636. San Francisco: Jossey-Bass.

References
(cont.)

Solmon, Lewis C. & Taubman, Paul J. eds. 1973. Does College Matter: Some Evidence on the Impacts of Higher Education. New York: Academic Press.

Spaeth, Joe L. 1976. "Cognitive Complexity: A Dimension Underlying the Socioeconomic Achievement Process" in William H. Sewell, et al. Schooling and Achievement in American Society. New York: The Academic Press. pp. 103-32.

Thurow, Lester C. 1975. Generating Inequality. New York: Basic Books.

Vermilye, Dyckman W. ed. 1977. Relating Work and Education. San Francisco: Jossey-Bass.

INSTITUTION FOR SOCIAL AND POLICY STUDIES

The mission of the Institution for Social and Policy Studies (ISPS) is to encourage and undertake multidisciplinary research and education. The ISPS is oriented to the exploration of social problems rather than to the refinement of discipline-based methodology. In recent years, ISPS research has focused on the problems of the city, education, health service delivery, and on the modeling of social systems. Currently, research is also being developed on criminal justice, governmental reform, environment, income distribution, aging, the policy-making process, and value problems in public policy. ISPS is not a consulting organization but an instrument for enriching the social sciences and related disciplines in the University.

Higher Education Research Group
Institution for Social and Policy Studies
1732 Yale Station
New Haven, Connecticut 06520